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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,721	07/24/2001	Song Chen	9824-067-999	5513

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EXAMINER

LEE, JOHN J

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/912,721

Applicant(s)

CHEN ET AL.

Examiner

JOHN J LEE

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-17,19,20,22-27,31-37,39-45 and 47 is/are rejected.
- 7) ☒ Claim(s) 9,18,21,28-30,38 and 46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.5.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-8, 10-17, 19, 20, 22-27, 31-37, 39-45, and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouis et al. (US Patent number 6,741,608) in view of Buskens (US Patent number 6,192,250).

Regarding **claims 1 and 31**, Bouis discloses that a wireless communication system for hosting a plurality of processes (420, 430, 440 in Fig. 4), each process in said plurality of processes executed in accordance with a communication protocol, the communication protocol including a set of functions (Fig. 4, abstract, and column 3, lines 13 – 46). Bouis teaches that a plurality of application specific instruction (controller determines and places the modules into the series in an order) set processors (ASISP) (420, 430, 440 in Fig. 4), each ASISP capable of executing a subset of said set of functions included in said communication protocol (column 2, lines 12 – column 3, lines 12 and Fig. 4, 6, where teaches the transcoding controller selects and places the modules into the series in an order that optimizes conversion (according to speed, cost, fidelity, load or by any other desired measure)). Bouis teaches that a scheduler (transcoding controller (410) in Fig. 4) connected to said plurality of ASISPs for scheduling said plurality of ASISPs in accordance with a time-slicing algorithm

(optimal serious order) so that each process in said plurality of processes is supported by said wireless communication system (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12, where teaches the transcoding controller compares the path system loads to determine which path will produce the least amount of load on the system and capable of using optimal series of streaming conversion modules concurrently to convert positions of the data stream from source format to destination format). Bouis does not exactly disclose the limitation “the wireless communication system”. However, this would have been obvious to one having ordinary skill in the art at the time of applicant’s invention, because the Bouis teaches the telephone communications over the telephone network (see column 4, lines 30 – 40), more specifically, the telephone communication network uses GSM system as like wireless mobile communication system and the principle work is same in wire and wireless communication system.

However, Bouis does not specifically disclose the limitation “the wireless communication system has a plurality of processors”. However, Buskens discloses the limitation “the wireless communication system has a plurality of processors” (column 2, lines 25 – 63 and Fig. 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Bouis system as taught by Buskens, provide the motivation to achieve providing more reliability communication in communication network.

Regarding **claims 2 and 32**, Bouis discloses that each said ASISP further comprises an input register for receiving an input program and state associated

with a process in said plurality of processes (column 1, lines 35 – 65, Fig. 4, and column 2, lines 13 – 46), each instruction in said input program being part of a limited purpose instruction set that supports said subset of functions included in said communication protocol (column 2, lines 13 – column 3, lines 21 and Fig. 4). Bouis teaches that an output register for storing a value that indicates a state of said process after execution of said input program (column 2, lines 13 – column 3, lines 46 and Fig. 4).

Regarding **claims 3 and 33**, Bouis discloses that the input program is associated with a first process selected from said plurality of processes (column 2, lines 13 – column 3, lines 46 and Fig. 4). Bouis teaches that said time-slicing algorithm includes a step of allocating a selected ASISP in said plurality of ASISPs to said input program for a predetermined period of time (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12).

Regarding **claim 4**, Bouis discloses that the input program is not interrupted by said scheduler during said predetermined period of time (Fig. 4, 5 and column 7, lines 10 – 64).

Regarding **claims 5 and 34**, Bouis discloses that execution of said input program is completed during said predetermined period of time (Fig. 4, 5 and column 6, lines 23 – column 7, lines 24).

Regarding **claims 6 and 35**, Bouis discloses that the scheduler further includes a synchronization mechanism for synchronizing said plurality of ASISPs, the synchronization mechanism capable of reallocating an ASISP in said plurality of ASISPs from a first input program that is associated with a first process to a

second input program that is associated with a second process (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12).

Regarding **claims 7 and 36**, Bouis discloses that the first process is a first echo and said second process is a second echo (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claims 8 and 37**, Bouis and Buskens disclose all the limitation, as discussed in claim 1. Bouis further discloses that the first process is each echo associated with a first mobile and said second process is each echo associated with a second mobile (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claims 10 and 39**, Bouis discloses that including a plurality of memory modules, each memory module in said plurality of memory modules associated with a different ASISP selected from said plurality of ASISPs (column 5, lines 30 – column 6, lines 52 and Fig. 3, 4).

Regarding **claims 11 and 40**, Bouis discloses that the state of said process stored in said output register is stored in a unique segment of said different memory module, the unique segment of said memory module being determined by an identity of said process (column 5, lines 30 – column 6, lines 52 and Fig. 3, 4).

Regarding **claims 12 and 41**, Bouis discloses that the output register is further used to store a process identifier value that provides said identity of said process (column 5, lines 30 – column 6, lines 52 and Fig. 3, 4, 6).

Regarding **claims 13 and 42**, Bouis discloses that the communication protocol is a code division multiple access (CDMA) protocol (Fig. 1 and column 4, lines 21 – column 5, lines 30).

Regarding **claims 14 and 43**, Bouis and Buskens disclose all the limitation, as discussed in claim 1. Bouis further discloses that the communication protocol is selected from the group consisting of IS-95 CDMA, IS-95B CDMA, CDMA TIA IS2000, TIA IS 2000A, wideband CDMA (WCDMA), cdma2000, and ARIB WCDMA (Fig. 1, 4 and column 4, lines 21 – column 5, lines 30).

Regarding **claim 15**, Bouis discloses that the communication protocol is a time division multiple access (TDMA) protocol (Fig. 1 and column 4, lines 21 – column 5, lines 30).

Regarding **claim 16**, Bouis discloses that the communication protocol is IS-136 TDMA (Fig. 1 and column 4, lines 21 – column 5, lines 30).

Regarding **claim 17**, Bouis discloses that the ASISP is a finger ASISP and said subset of functions comprises a delay lock loop (DLL) and a channel estimation (column 2, lines 26 – 46, Fig. 4, 6, and column 5, lines 54 – column 6, lines 52).

Regarding **claims 19 and 44**, Bouis discloses that each process in said plurality of processes is an echo (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claims 20 and 45**, Bouis discloses that each process in said plurality of processes uniquely corresponds to a different mobile hosted by said wireless communication system and each said process combines a plurality of

echoes associated with the corresponding different mobile (Fig. 4, 6 and column 5, lines 54 – column 6, lines 52).

Regarding **claims 22 and 47**, Bouis and Buskens disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that each instruction in said limited purposed instruction set includes an arithmetic logic unit field, a load field, and a load/store field (Fig. 4, 6 and column 5, lines 54 – column 6, lines 52).

Regarding **claim 23**, Bouis and Buskens disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that providing a centralized controller (transcoding controller (410) in Fig. 4) for sending control commands to each said ASISP in said plurality of ASISPs (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6, where teaches the transcoding controller selects and places the modules into the series in an order (instructions) that optimizes conversion Bouis teaches that the centralized controller schedules the functions calculated by each said ASISP in said plurality of ASISPs in a master/slave relationship, thereby reducing said amount of inter-process overhead between said computing components in said device (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12, where teaches the transcoding controller compares the path system loads to determine which path will produce the least amount of load on the system and capable of using optimal series of streaming conversion modules concurrently to convert positions of the data stream from source format to destination format).



Regarding **claim 24**, Bouis and Buskens disclose all the limitation, as discussed in claims 1 and 23.

Regarding **claim 25**, Bouis and Buskens disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that the process state information describes a state of said communication process (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claim 26**, Bouis and Buskens disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that each said ASISP in said plurality of ASISPs receives input from non-scheduling control blocks in said communication architecture in addition to said scheduling commands from said centralized controller (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claim 27**, Bouis and Buskens disclose all the limitation, as discussed in claims 1 and 3. Bouis further discloses that the scheduling scheme is a time-slicing algorithm that allocates computational tasks to each ASISP in said plurality of ASISPs in a time-sliced fashion (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12).

***Allowable Subject Matter***

3. Claims 9, 18, 21, 28-30, 38, and 46 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose “the limited purpose instruction set includes a "wait" instruction for synchronization, and each application specific

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instruction set processors (ASISP) in said plurality of ASISPs is configured so that when said "wait" instruction is received by said input register, the ASISP does execute a communication protocol function during said predetermined period of time and then automatically returns to an idle state thereby reducing a power consumption of the ASISP during the predetermined period of time, and the ASISP is a combiner ASISP and said subset of functions comprises a frequency error estimation, a finger energy estimation, and a signal-to-interference (SIR) estimation, and each said ASISP in said plurality of ASISPs is capable of executing said subset of said set of functions on a time-scale of about 400 to about 5,000 times per second" as specified in the claims.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Merritt et al. (US Patent number 6,421,429) discloses Network Based System Enabling Image Communications.

Jeffords et al. (US 2001/0042139) discloses Replicated Resource Management System for Managing Resources in a Distributed Application and Maintaining a Relativistic View of State.

Information regarding...Patent Application Information Retrieval (PAIR) system... at 866-217-9197 (toll-free)."

Any response to this action should be mailed to:

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Hand-delivered responses should be brought to Crystal Park II, 2121  
Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications  
from the examiner should be directed to **John J. Lee** whose telephone number is  
(703) 306-5936. He can normally be reached Monday-Thursday and alternate  
Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful,  
the examiner's supervisor, **Nay Aung Maung**, can be reached on (703) 308-7745.  
Any inquiry of a general nature or relating to the status of this application should  
be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L  
July 23, 2004

John J Lee

  
**NICK CORSARO**  
**PATENT EXAMINER**